



# Gatwick Airport Northern Runway Project

Design and Access Statement  
Appendix 1 – Design Principles – Clean Version

**Book 7**

VERSION: 3.0

DATE: APRIL 2024

Application Document Ref: 7.3

PINS Reference Number: TR020005

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## 1 Introduction

### 1.1 Introduction

- 1.1.1 This Appendix describes the Design Principles that underpin the design and integration of the Project into its context. They are written to capture the key principles documented within this DAS that have shaped the indicative design so far as part of development of the masterplan, and to make a commitment that these will be maintained and developed as part of future detailed design and delivery phases of the Project.
- 1.1.2 The Design Principles represent a ‘forward-looking’ view of the key components of the design, whereas the earlier volumes of this DAS illustrate the process whereby the masterplan was achieved. The principles will be followed at the detailed design stage as secured through DCO Requirements 4 and 5.
- 1.1.3 The Design Principles reflect the design commitments of Gatwick Airport Limited (GAL) in relation to the Project. They are intended to set out a unified approach to design and capture the collective knowledge of the Project team at the time of making an application for development consent. They create an overarching, shared resource which give clarity to stakeholders over the required design outcomes. They give detail on design intent and objectives to be achieved, whilst providing some flexibility for the detailed designs to be developed.

### Approach to Control of Design

- 1.1.4 These Design Principles will be secured through the DCO and will provide certainty as to the principles that will be applied in designing the Project. They provide stakeholders with assurance on how the design of the Project will be developed following the grant of consent.
- 1.1.5 Two DCO requirements in Schedule 2 of the **Draft Development Consent Order** [\[REP1-004\]](#) require that, before work can commence on any relevant part of the Project, details of buildings, structures and works must be submitted to and approved by

the relevant local planning authority or relevant local highway authority. These details must be in accordance with these Design Principles. One requirement restricts the development of local highways and the other restricts development of the authorised development (excluding highway works and excepted development).

- 1.1.6 This Appendix forms one of a suite of control documents that capture the Project's operational design-related commitments.
- 1.1.7 Other control documents that also secure measures related to the Project's design include:
- The plans contained within **Book 4 – Plans and Drawings**.
  - **ES Appendix 5.3.2 Code of Construction Practice** [[REP1-021](#)].
  - **ES Appendix 8.8.1 Outline Landscape and Ecology Management Plan** [[REP2-021](#), [REP2-023](#), [REP2-025](#) and [REP2-027](#)].
  - **ES Appendix 5.4.2 Carbon Action Plan** [[APP-091](#)].
  - **ES Appendix 5.4.1 Surface Access Commitments** [[APP-090](#)].
  - **ES Appendix 11.9.6 Flood Risk Assessment - Annex 2 Surface Access Drainage Strategy** [[APP-148](#)]; and
  - **ES Appendix 19.8.1 Public Rights of Way Management Strategy** [[REP2-009](#)].
- 1.1.8 This Appendix will be a control document and should be read in conjunction with the other control documents and **ES Appendix 5.2.3 Mitigation Route Map** [[REP2-011](#)] to understand the full suite of mitigation measures proposed.
- 1.1.9 The list below sets out where design principles are secured in other control documents:
- In the case of landscape and ecological design, detailed landscape requirements are secured in the **ES Appendix 8.8.1 Outline Landscape and Ecology Management Plan** [[REP2-021](#), [REP2-023](#), [REP2-025](#) and [REP2-027](#)]. These Design Principles provide landscape and ecological principles to be considered in the development of detailed design alongside the detailed requirements of the oLEMP which will be fully defined through the relevant LEMP. Therefore, these documents are to be read in parallel when designing works. The **Draft Development Consent Order** [[REP1-004](#)] includes a requirement that, before works are commenced on any part of the Project, a landscape and ecology management plan (LEMP) must be

submitted to and approved by the relevant planning authority (DCO Requirement 8). The LEMPs must be substantially in accordance with the **ES Appendix 8.8.1 Outline Landscape and Ecology Management Plan** [[REP2-021](#), [REP2-023](#), [REP2-025](#) and [REP2-027](#)].

- There are specific requirements in the **Draft Development Consent Order** [REP1-004] for the approval of detailed drainage designs (DCO Requirements 10). The detailed drainage designs for the proposed development (with the exception of the highways works and excepted development) must be in accordance with the drainage Design Principles included within this Appendix. The detailed drainage designs for the highway works must be in accordance with the **Surface Access Drainage Strategy** (Annex 2 to the Flood Risk Assessment [[APP-148](#)]) which has been shared with the local highway authorities and National Highways (DCO Requirement 11).
- Construction-related design commitments (including compound siting and design) are set out in the **ES Appendix 5.3.2 Code of Construction Practice** [REP1-021] and its subsidiary plans. DCO Requirement 7 specifies that the construction of the authorised development must be carried out in accordance with the **ES Appendix 5.3.2 Code of Construction Practice** [REP1-021].

### Approach to Control of Design

- 1.1.10 The works subject to detailed design approval are described in DCO Requirements 4 and 5 in Schedule 2 of the **Draft Development Consent Order** [[REP1-004](#)]. The relevant local planning authority or the relevant highway authority will approve the detailed design and the detailed designs must be in accordance with these Design Principles. This includes ensuring that the detailed design is in general accordance with the Design Principles. DCO Requirement 4 requires that CBC is consulted on any excepted development prior to that development being carried out and any excepted development must also be in accordance with these Design Principles.
- 1.1.11 To assist with an understanding of the design against the Design Principles, they have been split into four categories:
- Project-Wide Design Principles;
  - Detailed Built Form Design Principles;

- Detailed Drainage Design Principles; and
- Detailed Landscape Design Principles.

**Table 1.11.1: Project-Wide Design Principles**

Project-Wide Design Principles	
<b>Landscaping</b>	
L1	Any trees, scrub, habitats and hedgerows which are features of ecological value will be retained and incorporated within the design, where feasible to do so and with regards to the Removal and Retention Plans for trees and vegetation to be approved under the detailed Arboricultural and Vegetation Method Statements described in CoCP Annex 6 (Doc Ref. 5.3).
L2	Tree and shrub planting will be provided within built-up areas (such as car parks) to reinforce retained tree lines and across the Project. The landscape planting will include a variety of native trees and shrubs and wildflower grasslands.
L3	New woodland will be planted along the highway works and new road alignments. In particular, an existing non-native hedgerow comprising Leyland cypress between the A23 London Road and Perimeter Road East will be replaced with a native species-rich hedgerow (Work No. 42).
L4	Vegetation retention proposals for all elements of the Project that coincide with existing significant vegetation including hedgerows, woodland, trees, shrubs, wetland and amenity planting or elements of the Project will be designed to: <ul style="list-style-type: none"> <li>▪</li> <li>▪ Ensure existing vegetation is retained wherever possible and adverse impacts on the important features and locally distinctive patterns of development at Gatwick Airport are minimised.</li> <li>▪ Minimise adverse impacts on the character of surrounding landscapes and townscapes.</li> <li>▪ Prevent the coalescence of the airport and settlements of Crawley and Horley.</li> <li>▪ Protect important urban green spaces, including Riverside Garden Park and Church Meadows.</li> <li>▪ Ensure that visually significant vegetation is retained to minimise adverse effects on visual receptors, protect important views and protect the natural beauty and setting of the AONBs and the National Park</li> </ul>

<b>Project-Wide Design Principles</b>	
L5	<p>The management of, or implementation of, proposed mitigation to enhance existing green infrastructure including hedgerows, woodland, trees, shrubs, wetland and amenity planting will be designed to:</p> <ul style="list-style-type: none"> <li>▪ Enhance the character, visual quality and biodiversity of Gatwick Airport and its surrounding landscape/townscape.</li> <li>▪ Enhance the screening capacity of visually significant vegetation.</li> </ul>
L6	<p>Proposed woodland, tree, scrub, shrub, wetland, amenity and grassland planting will be designed to:</p> <ul style="list-style-type: none"> <li>▪ Ensure a high quality environment is created within Gatwick Airport and its surrounding landscape/townscape.</li> <li>▪ Provide replacement/compensation planting where vegetation would be removed, particularly as a result of surface access improvements within and adjacent to the A23/M23 Spur corridor.</li> </ul>
L7	<p>Proposed earth shaping, embankments, cuttings or bunds will be designed to:</p> <ul style="list-style-type: none"> <li>▪ Ensure that visual screens are provided to minimise adverse effects on visual receptors and provide an opportunity for the creation of diverse habitats.</li> <li>▪ Provide replacement/compensation features where they have been removed.</li> </ul>
L8	<p>Proposed fences, walls or barriers will be designed to:</p> <ul style="list-style-type: none"> <li>▪ Ensure that visual screens are provided to minimise adverse effects on visual receptors.</li> <li>▪ Provide replacement/compensation features where they have been removed.</li> </ul>
L9	<p>Proposed hard landscaping will be designed to:</p> <ul style="list-style-type: none"> <li>▪ Enhance existing green infrastructure including hedgerows, woodland, trees, shrubs, wetland and amenity planting;</li> </ul>



<b>Project-Wide Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Enhance the character, visual quality and biodiversity of Gatwick Airport and its surrounding landscape/townscape.</li> <li>▪ Enhance the screening capacity of visually significant vegetation.</li> </ul>
L10	A buffer zone of at least 15 metres will be provided around any areas of Ancient Woodland, measured from the boundary of the woodland.
<b>Built Form</b>	
BF1	All new buildings constructed as part of the Project will be designed and constructed to achieve Net Zero emissions during operation.
BF2	Detailed design will consider how to reduce reliance on the energy grid during prolonged warmer/colder seasons and more extreme temperature events, particularly low carbon heating and cooling systems and ventilation systems. It will also consider measures to reduce water use and increase re-use across new buildings.
BF3	The design of buildings should consider the implementation of design measures/features to manage the risk of extreme storm events, flood events and heatwave related drought events.
<b>Noise</b>	
N1	Detailed design should aim to minimise noise emissions from noise sources and ensure that noise-sensitive facilities are designed to insulate them from external noise to meet good internal noise standards. Noise barriers and bunds (described below) should be designed to deliver the noise screening for aircraft and other sources anticipated in the Environmental Statement.
N2	Plant associated with new facilities should be designed with noise attenuation where necessary to avoid noise disturbance to noise-sensitive uses on and off-site, in particular with reference to BS4142 for off-site receptors.
N3	To reduce adverse noise impacts associated with the proposed surface access improvements, the design shall include:

<b>Project-Wide Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ A new right turn onto the A23 from the North Terminal Roundabout which removes the current need for traffic wishing to turn right instead having to turn left and U-turn at the Longbridge Roundabout, thus reducing traffic flows on this section of the A23.</li> <li>▪ Approximately 1 metre high noise barrier to be installed along the North Terminal Roundabout flyover elevated section (facing Riverside Garden Park).</li> <li>▪ Approximately 1 metre high noise barrier to be installed along the South Terminal Roundabout flyover elevated section, north side.</li> </ul>
<b>Resource &amp; Waste</b>	
RW1	Detailed design should seek opportunities to repurpose the use of existing assets, components, products and materials.
<b>Lighting &amp; Amenity</b>	
LA1	Lighting levels will take account of the extent to which people need to see after dark and how this varies from area to area, with some requiring high levels of visual acuity whilst others should enable just a basic understanding of scale and the ability to identify a safe passage through a space.
LA2	The lighting design for each element of the Project will consider the manner in which the space that is being designed will be used after dark as well as its relationship to spaces adjoining it.
LA3	A considered and consistent lighting approach should be developed for the key navigational routes such as roads and pedestrian paths. Light will play an important role in supporting legibility and accessibility and in reinforcing specific visual and physical connections across Gatwick Airport.
LA4	The design of artificial lighting must support the various needs of the passengers and staff at Gatwick Airport after dark. This includes those with special needs and the elderly. Supporting a highly accessible after-dark environment will include avoiding

Project-Wide Design Principles	
	excessive contrasts, avoiding direct and reflected sources of glare, avoiding shiny, mirror-like surfaces at pedestrian level, controlling shadow and limiting potentially confusing upward lighting.
LA5	Energy efficiency should be considered at all stages of the Project, including design, construction and operation. This includes the efficiency of the energy supply and whether renewable energy measures could be integrated into the design of the Project.
LA6	Artificial light must be designed to assist in maintaining a safe environment at all times. This includes positively defining potential hazards such as steps and ramps and areas where pedestrians encounter moving vehicles, at for example, pedestrian crossings. Such areas may be defined after dark through passive techniques, such as landscape materials with appropriately contrasting reflectance, as well as through active illumination; perhaps using focused light and increased intensity.
LA7	<p>Lighting should be designed to provide an overall sense of security throughout Gatwick Airport, including supporting both active surveillance (e.g. CCTV) if/when required and modelling of people and surfaces should be provided where required. Where CCTV surveillance is supported by infra-red technology, the requirement for additional light in the visible spectrum may not always be necessary.</p> <p>It should be noted that perceptions of safety and security are not necessarily dependent on providing high intensities of light and indeed, in some cases, low levels of light can be important in maintaining a sense of security and privacy. Creating an environment that feels secure will largely be dependent on ensuring that spaces are legible, appear well maintained, give due consideration to inclusivity and do not inhibit adaptation.</p>
LA8	In general, lighting should be controlled to remain contained within the site boundary. Positioning and the use of directional lighting and shields should be used to prevent unintended light spill.

### Project-Wide Design Principles

LA9	Lighting in the vicinity of sensitive receptors should ensure that potential adverse effects are identified, controlled and mitigated. Mitigation should typically be provided in the form of lighting equipment utilising precise optics and lenses, baffles and light shields, in conjunction with a suitable lighting control regime. Individual habitat requirements may necessitate the specification of a particular lighting spectrum, however this should be proportionate and not at the expense of safety.
LA10	The lighting design should consider sustainable development and be designed to minimise adverse impacts on biodiversity, local residents and users of public rights of way and open space through specifying types of lighting equipment, mounting location, materiality, durability and light source to minimise disruption to safety and security during operation.
LA11	Lighting will be designed to avoid disturbance to areas of value for bats by shielding adjacent habitats of value.

**Table 1.11.2: Detailed Built Form Design Principles**

<b>Detailed Built Form Design Principles</b>	
<b>North &amp; South Terminal Buildings (Work Nos. 22 and 23)</b>	
<b>DBF1</b>	<p>For the North Terminal building, the northern extension shall comprise approximately 9,900m<sup>2</sup> of additional floorspace and the southern extension shall comprise approximately 12,600m<sup>2</sup> of additional floorspace.</p> <p>For the South Terminal building, the extension shall comprise approximately 15,000m<sup>2</sup> of additional floorspace.</p> <p>The extensions to both terminal buildings shall incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ A contemporary aesthetic ensuring that the extensions and the existing buildings complement each other, reflect modern design techniques and use high quality design materials.</li> <li>▪ The façade will be optimised where possible to provide natural light and views to the airfield.\”</li> <li>▪ Materials will include metal cladding and glazed curtain walling.</li> <li>▪ Solar shading to limit glare and overheating on the southern façade.</li> </ul>
<b>DBF2</b>	<p>The design of terminal buildings will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing.</li> <li>▪ Accessibility for all.</li> <li>▪ Floorplate configuration to promote natural daylight and intuitive wayfinding.</li> <li>▪ Efficient servicing and recycling.</li> </ul>

<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Flexibility for future change.</li> <li>▪ Consider the re-use of existing structure and building fabric.</li> <li>▪ Sense of place and high-quality passenger experience.</li> <li>▪ Robust fabric and materials.</li> <li>▪ Acoustic environment design.</li> </ul>
<b>Hotel Buildings (Work Nos. 26, 27, 28(a) and 29)</b>	
<b>DBF3</b>	<p>The hotel buildings will incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ A contemporary aesthetic reflecting modern design techniques and use high quality design materials, suitable for its immediate context and adjacent buildings, and of an aesthetic to suit hotel building typology.</li> <li>▪ The external appearance will comprise lightweight cladding and areas of glazing to the public areas of the building.</li> <li>▪ Provide windows to individual rooms taking into consideration privacy and acoustic requirements.</li> <li>▪ Provide good-quality public realm, including hard and soft landscaping, around the hotel to provide visual and attractive amenity for staff and visitors to the building.</li> </ul>
<b>DBF4</b>	<p>The design of the hotel buildings will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including Disability Discrimination Act (DDA) compliant access).</li> <li>▪ Accessibility for all.</li> <li>▪ Floorplate configuration to promote natural daylight and ventilation.</li> <li>▪ Core and floorplate design to permit flexibility in provision of dining area seating.</li> <li>▪ Security, safety and low energy lighting.</li> <li>▪ Efficient servicing and recycling.</li> </ul>

<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Lifecycle costs, demolition and future recycling of building fabric.</li> <li>▪ Internal acoustic standards between adjacent rooms or public areas.</li> <li>▪ Climate change and energy performance.</li> <li>▪ Renewable energy generation.</li> </ul>
<b>Office Building (Work No. 28(b))</b>	
<b>DBF5</b>	<p>The office building will incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ A site-wide, consistent, contemporary, and light industrial aesthetic to ensure that the building complements its surroundings, reflects all new buildings complement each other, reflect modern design techniques, high quality design and materials, and an industrial/aviation aesthetic.</li> <li>▪ Clearly defined entrance points.</li> <li>▪ The façade will incorporate large areas of glazing to give visual amenity and natural light to the users, with floor plate depth to be considered to avoid deep floor plates.</li> <li>▪ Solar shading to limit glare and overheating on the southern façade.</li> </ul> <p>Surrounding the office building will be soft landscaping and amenity space for employees and visitors.</p>
<b>DBF6</b>	<p>The design of the office building will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Functionality and efficiency to support the daily operations and tasks of the employees.</li> <li>▪ Flexibility.</li> <li>▪ Comfort and wellbeing.</li> <li>▪ Spaces that promote collaboration and communication.</li> </ul>

<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Technology integration.</li> <li>▪ Privacy and acoustics.</li> <li>▪ Accessibility for all.</li> <li>▪ Solar and passive shade.</li> <li>▪ Servicing and waste recycling.</li> <li>▪ Security, access control and CCTV.</li> <li>▪ Renewable energy generation.</li> </ul>
<b>Multi-storey and Decked Parking (Work Nos. 30(b), 31((e) and 32)</b>	
<b>DBF7</b>	<p>The buildings will incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ A naturally ventilated open façade.</li> <li>▪ Clearly visible entrance and circulation cores.</li> <li>▪ The building form will be unobtrusive with the structural solution providing the building form and language.</li> <li>▪ Additional specific façade design guidance for Multi-Storey Car Park H is detailed in Section 6.10.2 of the DAS.</li> </ul>
<b>DBF8</b>	<p>The design of buildings will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Level floor/ramp and ramped floor options.</li> <li>▪ Security, safety, CCTV, slip resistance and low energy lighting.</li> <li>▪ Blue badge holder parking.</li> <li>▪ Ventilation and smoke extraction.</li> <li>▪ Charging points for electric vehicles.</li> <li>▪ Renewable energy generation.</li> </ul>



<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Safe walking routes for pedestrians.</li> <li>▪ Access control and ticketing.</li> <li>▪ Cycle, scooter and motorcycle parking.</li> </ul>
<b>DBF9</b>	<p>In order to limit visibility to Charlwood House, the design of Car Park X (Work No. 31) will:</p> <ul style="list-style-type: none"> <li>▪ Locate the decked parking provision in the eastern portion of the Works Area.</li> <li>▪ Limit tree and hedgerow removal where possible, other than as required to widen the vehicular entrance to Car Park X;</li> <li>▪ Provide re-planting provisions along the southern boundary to further screen views.</li> </ul>
<b>Surface Parking (Work No. 33)</b>	
<b>DBF10</b>	<p>The surface parking will incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ Clear and orderly layout of spaces to aid circulation and space recognition.</li> <li>▪ Easy identifiable entrance and exit systems.</li> <li>▪ Parking to have solid surface or where appropriate to be surfaced with a permeable material (such as ‘Grasscrete’ paving), to facilitate sustainable drainage.</li> </ul>
<b>DBF11</b>	<p>The design of buildings will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ It will have mast lighting and CCTV.</li> <li>▪ Security, safety, CCTV, slip resistance and low energy lighting.</li> <li>▪ Blue Badge holder parking.</li> <li>▪ Use of recycled fabric from Gatwick Airport as sub-base or similar.</li> </ul>

<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Safe walking routes for pedestrians.</li> <li>▪ Access control and ticketing.</li> </ul>
<b>Taxiways (Work Nos. 4 and 18)</b>	
DBF12	Where proposed taxiways would bisect parts of floodplain areas syphoned connections are proposed to retain floodplain connection on both sides of the taxiways.
DBF13	<p>The design will include:</p> <ul style="list-style-type: none"> <li>▪ The replacement western noise mitigation bund and wall, including earthworks and bunding of approximately 8 metres in height (forming the western section of the noise bund and wall) and up to 10m in height (forming the eastern section of the noise wall, beyond the bund), provided at the western end of northern runway; and</li> <li>▪ Noise barriers approximately 10 metres in height shall be provided for approximately 500 metres to the north of the relocated Taxiway Juliet and around the boundary of the re-located fire training ground.</li> </ul>
<b>Perimeter Road South (Work No. 42)</b>	
DBF14	The design will include the construction of a 300mm high weir on the southern entrance to the River Mole runway culvert (eastern box).
DBF15	Creation of a fish pass on the existing weir located immediately upstream of the River Mole runway culvert, designed to be suitable for multi species to improve fish passage particularly during low flow conditions.
<b>Surface Access (Work Nos. 24, 25, 35, 36 and 37)</b>	
DBF16	Local highway authority roads are to be designed in accordance the relevant local design standards, including the Manual for Streets.

<b>Detailed Built Form Design Principles</b>	
DBF17	The design will include a noise barrier approximately one metre in height along the North Terminal roundabout flyover elevated section (facing Riverside Garden Park).
DBF18	The design will include a noise barrier approximately one metre in height along the South Terminal roundabout flyover elevated section, north side.
DBF19	The extension to the existing culvert under the A23 on the Burstow Stream Tributary will be designed to be as short as possible and would be designed with a depressed invert and a natural bed gradient in order to maintain continuity of flow and sediment transport capability. The culvert would also be designed with splayed wing walls to reduce the light and dark barrier.
DBF20	An active travel path for pedestrian and cyclists will be provided to connect Longbridge Roundabout to Car Park Y on the southern side of the highways improvement works. This will include a raised embankment on the right bank of the River Mole. To maintain floodplain connectivity culverts will be installed beneath the travel path.
DBF21	The permanent lighting design as part of the Longbridge Roundabout highways improvements will consider the proximity to the Church Road (Horley) Conservation Area.
DBF22	The extent of vegetation clearance and planting as part of the Longbridge Roundabout highways improvements should be designed to avoid visual impacts on views across the Church Road (Horley) Conservation Area.
DBF23	The design will include the provision of a permanent additional pedestrian route linking Riverside Garden Park into the replacement public open space in Car Park B, linking with the Sussex Border Path to the north of the A23.
<b>Replacement Care Facility (Work No. 9)</b>	
DBF24	<p>The replacement CARE facility building will be of a contemporary design to reflect its surroundings and efficient methods of construction and materials. The building design will incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ Structural frame, with lightweight cladding and translucent panels where possible for natural daylighting.</li> </ul>

<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Profiled metal roof or composite sheet cladding, with translucent panels to key areas (such as office space).</li> </ul>
<b>DBF25</b>	<p>The main building will be designed having regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including DDA compliant access).</li> <li>▪ Security, safety and low energy lighting.</li> <li>▪ Efficient servicing and recycling.</li> <li>▪ Safe pedestrian walking routes.</li> <li>▪ Good quality staff accommodation and amenities.</li> <li>▪ Lifecycle costs, demolition and future recycling of building fabric.</li> <li>▪ Surface parking with disability provision.</li> </ul>
<b>DBF26</b>	<p>The design of the replacement CARE facility will take account of the movement of Large Refuse Vehicles, including the need for unloading, loading and parking of these vehicles. The parking spaces for these vehicles will be circa 18m x 12m x 2.5m in size.</p>
<b>Replacement Motor Transport Facilities (Work No. 10)</b>	
<b>DBF27</b>	<p>The design of the main building in the replacement motor transport facilities will be of a contemporary design to reflect its surroundings and efficient methods of construction and materials. The building design will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including DDA compliant access).</li> <li>▪ Security, safety and low energy lighting.</li> <li>▪ Efficient servicing and recycling.</li> <li>▪ Safe pedestrian walking routes.</li> </ul>

<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Good quality staff accommodation and amenities.</li> <li>▪ Lifecycle costs, demolition and future recycling of building fabric.</li> <li>▪ Surface parking with disability provision.</li> </ul>
<b>Replacement Ground Maintenance Facilities (Work No. 11) and Replacement Airfield Surface Transport Facilities (Work No. 12)</b>	
<b>DBF28</b>	<p>The hardstanding area of the replacement ground maintenance facilities will have an area of 1,230m<sup>2</sup> and the hardstanding area of the replacement airfield surface transport facilities will have an area of approximately 1,440m<sup>2</sup>. If the facilities are designed together, then opportunities will be explored to reduce the overall area of hardstanding to be lower than the combined total (of approximately 2,670m<sup>2</sup>) through efficiencies in the design.</p> <p>The hardstanding area will be designed to provide sufficient space for vehicles to manoeuvre.</p>
<b>DBF29</b>	<p>The design of the replacement facilities will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including DDA compliant access).</li> <li>▪ Security, safety and low energy lighting.</li> <li>▪ Efficient servicing and recycling.</li> <li>▪ Safe pedestrian walking routes.</li> <li>▪ Lifecycle costs, demolition and future recycling of building fabric.</li> <li>▪ Surface parking with disability provision (only applicable to the replacement motor transport facilities).</li> </ul> <p>The design of the office and welfare facilities in the replacement ground maintenance facilities will be of a portacabin style building (or similar) and provide good quality staff accommodation and amenities.</p>
<b>Replacement Rendezvous Point North (Work No. 13)</b>	

### Detailed Built Form Design Principles

DBF30	<p>The design of the replacement rendezvous point north will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including DDA compliant access).</li> <li>▪ Security, safety and low energy lighting.</li> <li>▪ Efficient servicing and recycling.</li> <li>▪ Safe pedestrian walking routes.</li> <li>▪ Lifecycle costs, demolition and future recycling of building fabric.</li> <li>▪ Direct access to the airfield secure zone.</li> <li>▪ Secure fencing, with rapid access gates to the airfield secure zone and closable access gates to the landside roads.</li> </ul> <p>The cabin building will be a modular design, having regard to efficient methods of construction and materials.</p>
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### Replacement Fire Training Ground (Work No. 14)

DBF31	<p>The design of the replacement facilities will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including DDA compliant access).</li> <li>▪ Maximise the re-use of existing buildings and equipment where possible.</li> <li>▪ Security, safety and low energy lighting.</li> </ul>
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### Satellite Airport Fire Service Facility (Work No. 15)

DBF32	<p>The design of the replacement facilities will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Health and wellbeing (including DDA compliant access).</li> <li>▪ Good quality staff accommodation and amenities.</li> <li>▪ Security, safety and low energy lighting.</li> </ul>
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<b>Detailed Built Form Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Direct access to the airfield.</li> </ul>
<b>Aircraft Hangar (Work No. 16)</b>	
DBF33	<p>The hangar will be of a contemporary design to reflect its surroundings and efficient methods of construction and materials. The hangar will incorporate the following design features:</p> <ul style="list-style-type: none"> <li>▪ Longspan structural frame and large doors to provide clear width access for aircraft.</li> <li>▪ Metal cladding and roofing with use of transparent or translucent panels for natural daylighting in the main hangar space.</li> </ul>
DBF34	<p>The design of the hangar will have regard to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Security, safety and low energy lighting.</li> <li>▪ Consideration for the generation of renewable energy.</li> <li>▪ Good quality staff accommodation and amenities.</li> <li>▪ Consideration for the generation of renewable energy.</li> </ul>
<b>Larkins Road (Work No. 20)</b>	
DBF35	<p>The design of the realigned Larkins Road will have a carriageway width of approximately 9.3m, with a 5m verge on either side (except for the area south of Pond M, between Brockley Wood and Hangar 1).</p>
<b>Car Park H Site (Work No. 28)</b>	
DBF36	<p>The design of the Car Park H site will have regarding to the following considerations:</p> <ul style="list-style-type: none"> <li>▪ Seek to retain existing trees to the north and south where feasible to do so against design requirements.</li> <li>▪ Soft and hard landscaping provisions around the perimeter of new buildings for visual and attractive amenity.</li> </ul>

### Detailed Built Form Design Principles

- Access to the site from public transport provisions, taxis or on-airport car parks.
- Phasing requirements to enable the site to be delivered in phases.
- Improve the pedestrian route(s) between the site to South Terminal.
- Maintain two rights of access routes between the existing buildings forming the Hilton Hotel.
- Provision of a linear public realm area, linking to the new uses.



**Table 1.11.3: Detailed Drainage Design Principles**

<b>Detailed Drainage Design Principles</b>	
<b>Authorised Development (Excluding the highways works and expected development)</b>	
<b>DDP1</b>	Surface water drainage storage attenuation features (tanks, ponds etc) will be sized to cater for the 1 in 100 (1%) Annual Exceedance Probability (AEP) storm event plus an allowance for climate change as required by Environment Agency guidance.
<b>DDP2</b>	Loss of fluvial (river) floodplain would be mitigated to ensure no increase in flood risk to other parties through syphons and the flood compensation areas.
<b>DDP3</b>	Infiltration basins and retention ponds will not appear utilitarian or urban and would be designed to appear as naturalistic elements within the wider setting, that take account of existing topography, gradients and field boundaries. Planting would be provided to soften edges where this is appropriate to the context. The drainage design shall incorporate Sustainable Drainage Systems (SuDS) that provide for runoff treatment and reduce the risk of flooding in local catchments by providing storage and attenuation.
<b>DDP4</b>	The design of drainage and water mitigation measures should consider the exceedance of the networks/measures capacity and ensure that this would occur safely.
<b>DDP5</b>	Surface water drainage systems should be developed in accordance with the ideals of sustainable development (i.e. SuDS). These should seek to mimic the natural environment and replicate the natural drainage prior to development. This should prioritise the infiltration of runoff to ground where practicable over the restriction of runoff rates (i.e. attenuation). It should be noted that based on the preliminary ground investigation the majority of Gatwick Airport is located within an area of clay geology so infiltration may not be feasible.
<b>DDP6</b>	Improvements to the wastewater sewer system will include the following:

<b>Detailed Drainage Design Principles</b>	
	<ul style="list-style-type: none"> <li>▪ Replacement of pumps and the pumping main at pumping station PS06 to provide additional capacity; and</li> <li>▪ Construction of a new pumping station on the east side of the Brighton-London mainline railway to convey all wastewater flows from this area to Crawley STW to relieve the gravity outfall pipe discharging to Thames Water's Horley STW sewer network.</li> </ul>
<b>DDP7</b>	The Project will include additional treatment of flows from the long term storage lagoons to increase capacity for the storage of de-icer contaminated runoff.
<b>DDP8</b>	Car parks will include measures (e.g. interceptors) to ensure no detrimental water quality impact upon receiving watercourses.
<b>DDP9</b>	Ground and groundwater conditions will be taken into account in the detailed design to minimise risk to groundwater quality, to minimise impedance to groundwater flow and to minimise risk of groundwater flooding.
<b>DDP10</b>	<p>Storage features within the drainage network will be sufficient for the mitigation and to minimise any impact on water quality including:</p> <ul style="list-style-type: none"> <li>▪ A below ground storage Car Park Y up to 32,000m<sup>3</sup> within the existing airfield water drainage network (Work No. 30(a)).</li> <li>▪ A new surface water drainage pumping facility from the Pond A catchment.</li> </ul>
<b>DDP11</b>	A drainage network would be installed, consisting of carrier drains, filter drains, ditches and attenuation basins/ponds, along with flow control arrangements to limit discharges to watercourses.
<b>DDP12</b>	Drainage requirements will consider no environmentally significant detriment to the water quality of the receiving watercourses.

<b>Detailed Drainage Design Principles</b>	
<b>DDP13</b>	Airfield syphons are proposed to retain floodplain connection beneath the proposed taxiways. Syphons beneath the noise bund would maintain floodplain connectivity.
<b>DDP14</b>	<p>The water treatment works (constructed wetland treatment system) (Work No. 43) will be designed to treat de-icer contaminated runoff from the pollution storage lagoons based on a flow of 100l/sand treated to a standard that would allow discharge to the Gatwick Stream. The design of the constructed wetland system will include:</p> <ul style="list-style-type: none"> <li>• reed beds, surrounded by embankments and suitable boundary treatment;</li> <li>• blower systems, provided with acoustic hoods and enclosed by acoustic fencing;</li> <li>• a mix of wetland vegetation species within the reed beds, including those that are resilient to climate change;</li> <li>• bunded nutrient dosing tank and pumps, pipework, pumps, bunding and maintenance access; and a cabin, secure storage unit and the reprovision of the car parking for Gatwick Greenspace Partnership.</li> </ul>
<b>DDP15</b>	The new pumping station at the south-west of the site will be sized based on the final design of the Project to ensure runoff from new impermeable areas associated with the alterations to the runway and taxiways (within the existing Pond M catchment) is controlled to greenfield runoff rates.
<b>DDP16</b>	<p>Soft/bio engineering will be used in preference to concrete where natural riverbanks require protection at the connecting spillways to the new flood compensation areas (FCAs) from watercourses. The bank forms would also be varied where they are being altered/ lowered to aid natural variance of flow in the channel. Planting would take place on the Museum Field FCA. This would restore natural vegetation to the floodplain whilst protecting the banks from erosion.</p> <p>The FCAs would include measures to reduce their own impact including:</p> <ul style="list-style-type: none"> <li>▪ Fish refuges such as at low points within the FCA that could be connected to the watercourse by swales to encourage any fish that move with rising flood water to return to the river as flood waters recede.</li> </ul>

<b>Detailed Drainage Design Principles</b>	
	<ul style="list-style-type: none"> <li>Design flow control structure(s) to reduce water levels slowly (if the water level receded rapidly fish are more likely to be stranded).</li> </ul>
<b>DDP17</b>	A daylighted channel on the River Mole culvert will be provided and designed with a depressed invert and a natural bed gradient to maintain sediment transport capability. The extension will also be designed with splayed wing walls to reduce the light and dark barrier, as well as include baffles (refuges within a culvert that assist fish with their journey upstream) in the new channel or a low flow channel to retain sediment and create suitable depth of flow under a range of conditions. An expanded metal grid will be provided where the River Mole channel runs below the Taxiway Juliet and this new section of channel will include a low flow channel and a bed with substrate to allow vegetation to establish.
<b>DDP18</b>	Syphoned connections will be installed beneath the noise mitigation feature in the north-western area to maintain floodplain connectivity from Man's Brook.
<b>Highways Works (Work No. 35,36 &amp; 37)</b>	
<b>DDP19</b>	The drainage design for the highways works should comply with the principles set out in the ES Appendix 11.9.6 Flood Risk Assessment - Annex 2 Surface Access Drainage Strategy. (Doc Ref. 5.3).

**Table 1.11.4: Detailed Landscape Design Principles**

<b>Detailed Landscape Design Principles</b>	
<b>Replacement Open Space (Work Nos. 34(c) and 40)</b>	
DLP1	The location of open space should be easily accessible by all groups of people, including those with disabilities. The design of the space should also consider the needs of different groups of people, such as families with children, older adults, and people with disabilities.
DLP2	The activities and amenities provided in the open space should be versatile and suitable for different age groups and interests. For example, the space could include areas for sports, playgrounds, seating areas, and green spaces for picnics and relaxation.
DLP3	Open spaces should be well-lit and have clear lines of sight to prevent criminal activity and anti-social behaviour. Security measures should be provided, such as CCTV cameras, to deter criminal activity and provide a sense of safety for users.
DLP4	There should be footpath connections between the existing areas of open space in Riverside Garden Park and Church Meadows and replacement areas in Car Park B and to the west of the River Mole adjacent to Church Meadows.
DLP5	Woodland, scrub and species-rich grassland creation within Car Park B to provide an extension of Riverside Garden Park.
DLP6	Creation of new habitats within a newly created mitigation area north and east of Longbridge Roundabout comprising woodland, scrub and tree planting and species-rich, wet and dry grassland creation.
DLP7	Marginal planting would also be introduced around new attenuation ponds.
<b>Museum Field Environmental Mitigation Areas (Work No. 38)</b>	
DBF8	The design of the Museum Field Environmental Mitigation Area should consider the creation of new habitats in the western part of the site, comprising woodland, wet woodland, scrub and tree planting and species-rich grassland.
DLP9	The proposed earth bund in the south and east of Museum Field should provide a mosaic of habitats comprising scrub, grassland and bare or poorly vegetated ground to provide a matrix of habitats suitable for a variety of invertebrates.

<b>Detailed Landscape Design Principles</b>	
DLP10	The flood compensation areas (including access arrangements) at Museum Field and Brook Farm shall be designed in a manner that minimises the disturbance of buried archaeological remains as far as practicable.
DLP11	An extension to the River Mole footpath should be provided to the land at Museum Field and Brook Farm.
<b>Active Travel Routes</b>	
DLP12	Active travel measures are to be designed in with due consideration of relevant design guidance such as LTN 1/20 Cycle Infrastructure Design.
DLP13	Active travel measures should consider the inclusive design principles as set out in DMRB CD 143 Designing for Walking, Cycling and Horse-Riding.
DLP14	The Project’s active travel path for pedestrian and cyclists connecting Longbridge Roundabout to Car Park Y on the southern side of the highways improvement works will include a raised embankment on the right bank of the River Mole. Culverts should be used beneath the path to maintain floodplain connectivity culverts.
<b>River Mole diversion area (Work No. 39)</b>	
DLP15	The diversion of the River Mole should create an increased length of channel with a more sinuous, natural course and more diverse channel profile.
DLP16	The design should seek opportunities for ecological linkages through enhanced wildlife corridors and nodes.
<b>Pentagon Field ecological area (Work No. 41)</b>	
DLP17	<p>The design should provide:</p> <ul style="list-style-type: none"> <li>▪ Approximately 1ha of planting, including grassland reinstated for grazing of livestock.</li> <li>▪ New woodland planting along the eastern boundary (along Balcombe Road), approximately 15m in length.</li> </ul>

## 1.2 Glossary

**Table 1.2.1: Glossary of Terms**

<b>Term</b>	<b>Description</b>
CAA	Civil Aviation Authority
DAS	Design and Access Statement
EIA	Environmental Impact Assessment
ES	Environmental Statement
GAL	Gatwick Airport Limited
IEMA	Institute of Environmental Management and Assessment
mppa	Million passengers per annum
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
PEIR	Preliminary Environmental Information Report